



SUMMER ASSIGNMENTS

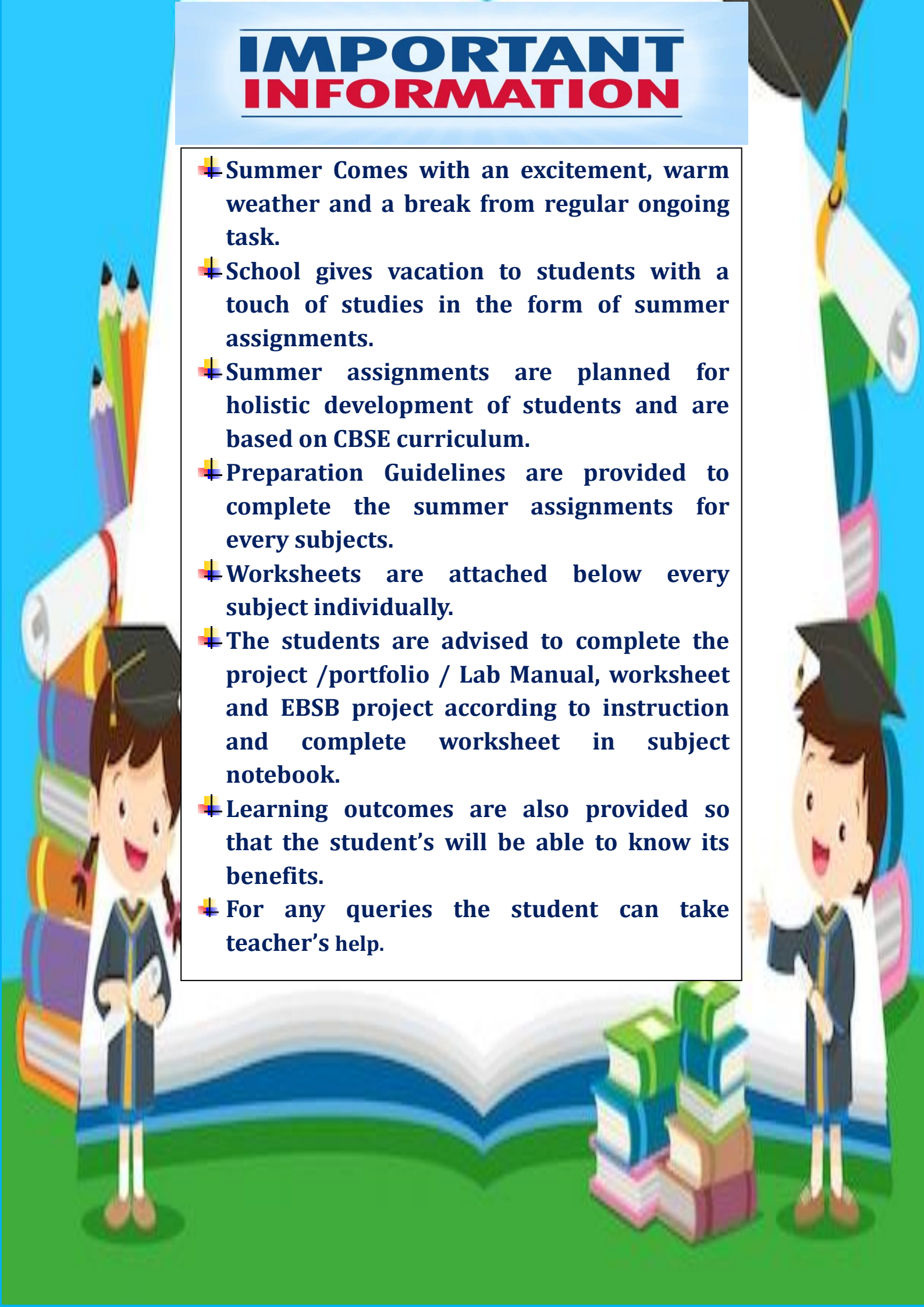
“Let’s get inspired and gain knowledge every day to achieve success”

CLASS - XII SCI



IMPORTANT INFORMATION

- ✚ Summer Comes with an excitement, warm weather and a break from regular ongoing task.
- ✚ School gives vacation to students with a touch of studies in the form of summer assignments.
- ✚ Summer assignments are planned for holistic development of students and are based on CBSE curriculum.
- ✚ Preparation Guidelines are provided to complete the summer assignments for every subjects.
- ✚ Worksheets are attached below every subject individually.
- ✚ The students are advised to complete the project /portfolio / Lab Manual, worksheet and EBSB project according to instruction and complete worksheet in subject notebook.
- ✚ Learning outcomes are also provided so that the student's will be able to know its benefits.
- ✚ For any queries the student can take teacher's help.



HOMEWORK

Benefits



Homework, also known as homework, is any tasks given by the teacher of a school to their students to be completed outside of class time. Homework helps students to review lessons taught in class and study them on their own.

1

Homework Improves Memory Power

2

Homework Enhances Concentration Power

3

Homework Strengthens Problem-Solving Skills

4

Homework Helps Students Get Better Grades

5

Homework Helps Students Excel In Future Tasks

6

Homework Teaches Discipline

7

Homework Helps Students Understand Lessons Better

8

Homework Helps Students Prepare For Exams

9

Homework Helps Students Develop Analytical Skills

10

Homework Stimulates Students' Imaginations



ASSIGNMENTS CHECKLIST



Lab Manuals

**Projects &
Worksheets**

Subject wise marks are included in Examination result



ENGLISH CORE (301)

CLASS-XII (SCI)



Learning Objectives



This Project stimulates students to use language in a meaningful way. To express their ideas about their projects, they need to consolidate vocabulary and grammar forms by interacting and exploring on the particular topic. The Project work improves the reading and writing skills among students. The aim of this study was to determine the effect of project work on student improvement in English language learning. The content analysis of recording and presentation of the projects enhance the student’s knowledge on the particular topic.

PROJECT

General Instruction

English Project should be done on the following topics. Topics are given as per the roll number of the students. The Project should be done in A4 size paper and arrange properly in stick file.

The Project must contain the following pages. Students must write all these in beautiful handwriting and decorate the paper beautifully arranged it in proper order.

CLASS-XII SCI – SEC – A

Roll no- 1 to 10

Significance of English Language in India.

Roll no – 11 to 20

Phobia and Fears among youngster.

Roll no – 21 to 30

Deteriorating Parents – Children relationship in India.

Roll no – 31 to 40

The development of Artificial Intelligence will help

Project Contents

- Cover Page - Title of the project
- Index
- Acknowledgement
- Certificate
- Objective
- Material required
- Action plan
- Content
- Questionnaire
- Report on Questionnaire

humanity.

CLASS-XII SCI- SEC - B

Roll no - 1 to 10

Effect of Insecurities and Fear on Human Mind.

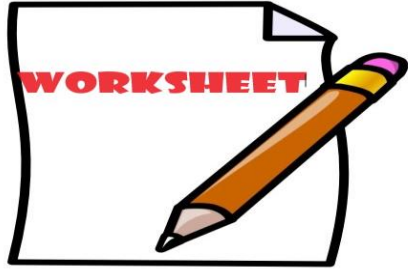
Roll no - 11 to 20

Beauty of Literature

Roll no - 21 to 32

Unrestrained Freedom of Speech and Expression is the Pillar of Progressive Society.

- Inference
- Conclusion
- Students' reflection
- Application and Future Scope
- Bibliography



*Worksheet is given below for your reference.
Student will solve the worksheet in the subject notebook.*



Through this project work students can able to develop their critical thinking skills as they learn to analyze, synthesize, and apply what they have learned. It enhances their creativity and fluency in English reading and writing skills.

SANSKAR PUBLIC SCHOOL, RAIGARH

WORKSHEET

CLASS -XII

SUB: ENGLISH (301)

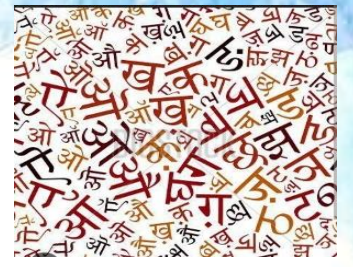
Students will solve the questions in the subject notebook.

1	"This is your last French lesson." How did Franz react to this declaration of M.Hamel? [Creativity]
2	What were the fear of poet as she looked at her mother in the poem " My mother at Sixty Six " [Critical reasoning]
3	Franz thinks, "Will they make them sing in German, even the pigeons?" What does this tell us about the attitude of the Frenchmen? [Analyze]
4	What a thunderclap these words were to me!" – Which were the words that shocked and surprised Franz? [Creativity]
5.	What helped Kamala Das put away the thought of her mother's old age? [Creativity]
6	Why has the mother been compared to the 'late winter's moon'? [Analyze]
7	What convinced Charley that he had reached the third level at Grand Central Station and not the second level? [Creativity]
8	How does Charley make his description of the third level very realistic? [Analyze]
9	Do you think that the third level was a medium of escape for Charley? Why? [Critical Thinking]
10	"When a people are enslaved, as long as they hold fast to their language it is as if they had the key to their prison." justify the statement in context to the story "The Last Lesson". [Analyze]
11	Do you see an intersection of time and space in the story "The Third Level" ? [Critical Thinking]
12	The modern world is full of insecurity, fear, war, worry and stresses. What are the ways in which we attempt to overcome them? [Analyze]
13	What poetic devices have been used by Kamala Das in 'My Mother at Sixty-six'? [Creativity]

14	What is the theme of the story the third level?	[Creativity]
15	<p data-bbox="280 230 1217 264">Write a letter in response to the following advertisement :</p> <p data-bbox="635 304 1050 383">Indian Pharmaceuticals Greater Noida , New Delhi</p> <p data-bbox="507 394 1177 427">Required trainee Medical Representatives</p> <p data-bbox="280 439 1393 732">Candidate should be Science or Pharmacy graduate and below 25 years of age. Fluency in English and any one of the regional languages is essential. Attractive stipend with handsome working allowances will be offered during training period. After successful completion of the training, the candidates will be appointed on regular basis. Please apply with complete resume and a passport size photograph at the above address.</p>	[Creativity]



HINDI (302)



LEARNING OBJECTIVES



- * "आत्मपरिचय" पाठ के माध्यम से कविता के भावार्थ को समझने में आसानी हुई।
- * कविता में प्रयुक्त अलंकार की पंक्तियों को रेखांकित करवाना ।
- * कविता की भाषा से अवगत कराना।
- * "दिन जल्दी जल्दी ढलता है" कविता के माध्यम से पक्षी और कवि के एकांकीपन को समझना।
- * परियोजना कार्य के माध्यम से छात्रों के अंदर परियोजना कार्य के महत्व को समझना ।
- * सृजनात्मक कौशल का विकास करना।

PROJECT

सामान्य निर्देश:

- * फाइल के प्रारंभ में स्कूल का फ्रंट पेज, आभार ज्ञापन, घोषणापत्र, अभिस्वीकृति, प्रमाण पत्र को प्रिंट करवाना अनिवार्य।
- * फाइल के पहले पेज में स्कूल का नाम, व्यक्तिगत परिचय, नाम, कक्षा, क्रमांक, विषय, शीर्षक एवं स्कूल का लोगो होना अनिवार्य।
- * आभार ज्ञापन, प्रमाण पत्र के साथ प्रधानाचार्य हस्ताक्षर, शिक्षक हस्ताक्षर का कॉलम अवश्य बनाएं।
- * परियोजना कार्य में अनुक्रमणिका (INDEX) विषयसूची, पेज नंबर अंकित करें।
- * सभी हिंदी परियोजना कार्य फाइल में करना है।
- * हिंदी परियोजना कार्य को अधिक सुंदर बनाने के लिए विभिन्न रंगों का प्रयोग करना अनिवार्य है।
- * फाइल को बैडिंग करते समय क्रम का विशेष ध्यान रखें।
- * फाइल में विषय का प्रस्तुतीकरण, विषय का विस्तार, उद्देश्य अध्ययन की, परिकल्पना, समस्या का बयान, स्रोत एवं संदर्भ ग्रंथ और, निष्कर्ष, अध्ययन का परिणाम, सीमाएं अध्यापक टिप्पणी का होना अनिवार्य।

प्रश्न 1: तीसरा हिंदी विश्व सम्मेलन कब और कहाँ हुआ था ? इसकी थीम क्या थी? हिंदी विश्व सम्मेलन की विशेषताएं एवं उद्देश्य लिखिए।

Topic:1 हिंदी विश्व सम्मेलन

प्रश्न 2: आधुनिक युग की शुरुआत कब हुई थी? आधुनिक युग को कितने भागों में बांटा गया है? आधुनिक युग की विशेषताएं लिखिए।

Topic:2 आधुनिक युग

प्रश्न3: रीतिकाल के किन्हीं दस कवियों का विस्तृत रूप से वर्णन कीजिए।

प्रश्न:4 प्रयोगवाद युग की शुरुआत कब से मानी जाती है? प्रयोगवाद की विशेषताएं एवं पाँच कवियों का वर्णन कीजिए।

प्रश्न :5 प्रगतिवादी युग की विशेषताएं लिखिए और किन्हीं पाँच लेखकों का परिचय दीजिए।

प्रश्न:6 छायावादी युग के स्तंभ कौन माने जाते हैं? छायावादी युग की विशेषताएं एवं पाँच कवियों का वर्णन कीजिए।

प्रश्न :7 भक्तिकाल को कितने भागों में बांटा गया है ? भक्तिकाल की विशेषताएं एवं किन्हीं पाँच कवियों का वर्णन कीजिए।

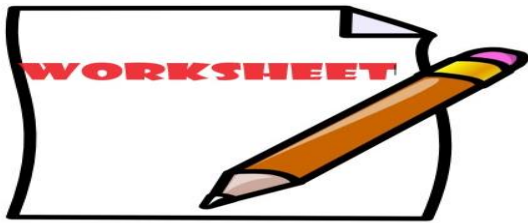
Topic:3 रीतिकाल

Topic:4 प्रयोगवाद युग

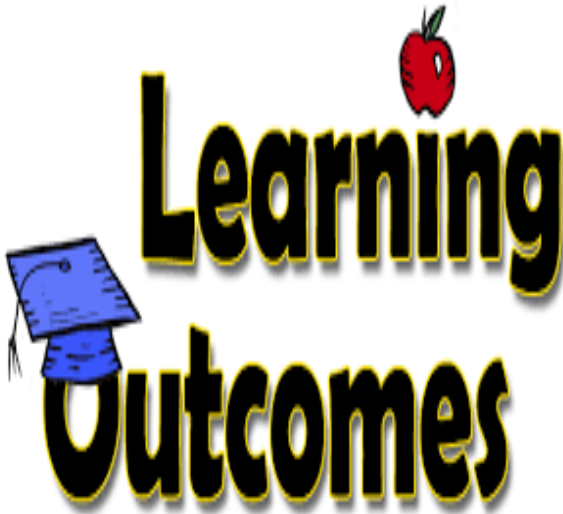
Topic:5 प्रगतिवादी युग

Topic:6 छायावादी युग

Topic:7 भक्तिकाल



छात्र नीचे दी गई वर्कशीट को हिंदी विषय नोट बुक में हल करें।



- * "आत्मपरिचय" पाठ के माध्यम से छात्रों ने कवि की जीवन जीने की शैली को जानने का प्रयास किया।
- * "आत्मपरिचय" पाठ के माध्यम से छात्रों ने समाज के प्रति अपने कर्तव्यों के बारे में समझ पैदा की।
- * "दिन जल्दी-जल्दी ढलता है" इस पाठ के माध्यम से छात्रों ने समय की गतिशीलता के बारे में जानकारी प्राप्त की। इसलिए हमें समय रहते ही अपने लक्ष्य को प्राप्त करना चाहिए।
- * परियोजना कार्य के माध्यम से छात्रों के अंदर सकारात्मक सोच , अभिव्यक्ति, व्यवहारिक ज्ञान ,समझ, आत्मविश्वास आदि की समझ प्राप्त की।
- * समाचार लेखन के माध्यम से छात्रों ने संपूर्ण देश, समाज आदि की जानकारी घर बैठे- बैठे प्राप्त करने में समर्थ होंगे।

SANSKAR PUBLIC SCHOOL, RAIGARH

WORKSHEET

CLASS - XII

SUB: HINDI (302)

Students will solve the questions in the subject notebook.

1	कवि स्नेह सुरा का पान कैसे करता है? (सोच आधारित प्रश्न)
2	"जग जीवन का भार और फिर भी जीवन से प्यार" यहाँ कवि ने जीवन के संदर्भ में यह विरोधी बात क्यों कही है? (समस्या समाधान आधारित प्रश्न)
3	संसार में कष्टों को सहकर भी खुशी का माहौल कैसे बनाया जा सकता है? (समस्या समाधान आधारित प्रश्न)
4	कवि को संसार अच्छा क्यों नहीं लगता है? (सोच पर आधारित प्रश्न)
5	कवि सीखे ज्ञान को क्यों भुला रहा है? (समस्या समाधान आधारित प्रश्न)
6	कवि और संसार के बीच क्या विरोधी स्थिति है? (रचनात्मक कौशल पर आधारित प्रश्न)
7	कवि के पास ऐसा क्या है? जिस पर बड़े-बड़े राजा न्योछावर हो जाते हैं? (समस्या समाधान आधारित प्रश्न)
8	कवि स्वयं को क्या कहना पसंद करता है और क्यों? (समस्या समाधान आधारित प्रश्न)
9	"हो जाए न पथ में " यहाँ किस पथ की ओर कवि ने संकेत किया है? (रचनात्मक कौशल पर आधारित प्रश्न)
10	चिड़ियों के परों में चंचलता आने का क्या कारण है? (रचनात्मक कौशल पर आधारित प्रश्न)
11	चिड़ियों के घोंसलों में किस दृश्य की कल्पना की गई है? (विश्लेषण विधि पर आधारित प्रश्न)
12	"मैं होऊँ किसके हित चंचल" का भाव स्पष्ट कीजिए। (रचनात्मक कौशल पर आधारित प्रश्न)
13	"आत्मपरिचय" कविता का प्रतिपाद्य लिखिए। (सोच आधारित प्रश्न)



COMPUTER SCIENCE (083)



LEARNING OBJECTIVES



Learning programming can help students to develop problem-solving skills, open up career opportunities, foster creativity, automate tasks, and promote personal development.

The aim of this Assignment is to engage students in critical thinking and encourage them to practice programming at home during holidays.

Through Writing Lab Manuals Students will be aware about Python Programming modules, file handling concepts and use of user defined functions.

The class project will help students to create something that is tangible and useful using Basic Objective & System design. Later on, it will augment with Python file handling/ Python SQL connectivity. Students will learn to find real world problem that is worthwhile to solve through Python Programming.

LAB MANUAL

PROJECT

General Instructions:

Students will practice the given program in Python IDLE/Online compilers and then write the programming in Computer Lab Record.

General Instructions:

Students will prepare the project in any one topic given below in MS Word up to System Design and take print out. Attach print out in stick file with School Cover Page. No spiral binding is required.

Assignment 5: Create a user defined function to check leap year.

Assignment 6: Create a user defined function to check a number is a prime number or a composite number.

Assignment 7 : Create a user defined function to Display the terms of a Fibonacci series.

Assignment 8 : Read a text file line by line and display each word separated by a #

Assignment No. 9 : Read a text file and display the number of vowels /consonant /uppercase/lowercase characters in the file.

Assignment No. 10 : Write a program to get student data from user and write on the binary file.

Topic 1: Health Care system

Topic 2: Polling System

Topic 3: Booking System

Topic 4: Grade Generation System

Topic 5: Electricity Bill Management

Topic 6: Quiz Game

Topic 7: Fitness Expert

Topic 8 : Gym Management System



Worksheet is given below for your reference. Student will solve the worksheet in the subject notebook,



After Completing this Assignment, the students will be able to efficiently use user-defined functions in Python and will develop a prior Knowledge about the Project coding. It will Boosts their logical thinking and problem-solving skills. It will also make them confident in developing mini applications.

SANSKAR PUBLIC SCHOOL, RAIGARH

WORKSHEET

CLASS - XII

SUB: COMPUTER SCIENCE (083)

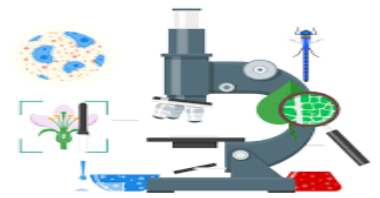
Students will solve the questions in the subject notebook.

1	Draw a Schematic representation of Tokens in Python. [Creative]
2	State True /False [Critical reasoning] Index value in list and string start from 0.
3	Compare Mutable & Immutable Data Type in Python. [Analyze]
4	Suresh wants to create a mini application in Python which will display calendar if year and months are entered by the user. Suggest a Python code to solve the purpose. [Application Based]
5.	Which of the following will give output as [21,2,9,7] ? [Critical Thinking] if list L = [1,21,4,2,5,9,6,7] a. print(L[1 : 8 : 2]) b. print(L[1 :: 2]) c. Both of the above d. None of the above
6	Get the output [Problem Solving] numbers = [1, 2, 3, 4, 5, 6, 7] res = [x * x for x in numbers] print(res)
7	Get the output [Problem Solving] list=[1,2,3] print('list before delete', list) del list [1] print('list after delete', list)
8	Convert the for loop to while loop. [Problem Solving] for tx in range (10,110,10): print (tx)
9	Get the output [Problem Solving] list1 = [5, 10, 15, 20, 25, 50, 20] # get the first occurrence index index = list1.index(20) # update item present at location list1[index] = 200 print(list1)

10	What will be the output? a = 4 i = 0 while i<a: print(i) i+=1 if i>1: break	[Problem Solving]
11	A tuple name subject stores the name of different subjects. Write the python code to convert the given tuple to a list and thereafter delete the last element of the tuple.	[Critical Thinking]
12	Solve the Expression $66/6*4-4+10$	[Problem Solving]
13	Find and write the output of the following python code: <pre> Msg="CompuTer" Msg1='' for i in range(0, len(Msg)): if Msg[i].isupper(): Msg1=Msg1+Msg[i].lower() elif i%2==0: Msg1=Msg1+'*' else: Msg1=Msg1+Msg[i].upper() print(Msg1) </pre>	
14	Anita wants to write statement to pick out the keys? Read the code shown below carefully and help her in completing python code. d = {"john":40, "peter":45}	[Application Based]
15	How to get the output “road map” from the string? “arithmetic solutions depth ”	[Critical Thinking]



BIOLOGY (044)



LEARNING OBJECTIVES



The aim of this Assignment is to engage students in critical thinking and encourage them to develop conceptual understanding.

The investigatory projects will improve students' self-efficacy, collaboration, problem-solving, critical thinking, and understanding of scientific concepts.

LAB MANUAL

PROJECT

General Instructions:

Student will write the Experiment in Biology Lab Manual

General Instructions:

Students will prepare a project file in any one topic given below and submit it in stick file with School Cover Page.

Only hand written project files will be accepted.

Experiment 2: Study the plant population density by quadrat method.

Experiment 3: Study the plant population frequency by quadrat method

TOPIC 1 - Applications of biotechnology

TOPIC 2 –Biodiversity loss and conservation

TOPIC 3 – Genetic Engineering

TOPIC 4 – Possible effects of drug addiction and its cure



SCIENCE MODEL

Topic 1: Pollination

Topic 2: Biodiversity



Worksheet is given below for your reference. Student will solve the worksheet in the subject notebook,



Learning Outcomes

After Completing this Assignment, the students will be able to develop a clear understanding of concepts. Through scientific investigation, they learnt how to apply the acquired knowledge, scientific concepts, theories, principles and laws of nature. They can use their higher-order process or thinking skills while making a project.

SANSKAR PUBLIC SCHOOL, RAIGARH

WORKSHEET

CLASS - XII

SUB: BIOLOGY (044)

Students will solve the questions in the subject notebook.

1	Draw a self explanatory mind map to show sexual reproduction in flowering plants. [Creative]
2	Is it possible that an unfertilized apomictic embryo sac gives rise to a diploid embryo? Give a reason in support of your answer. [Critical reasoning]
3	Which is a triploid tissue? How is the condition achieved in a fertilized ovule? [Analytical thinking]
4	In a flowering plant, a microspore mother cell produces four male gametophytes while a megaspore mother cell forms only one female gametophyte. Justify your answer. [Critical Reasoning]
5.	What is similar in the function performed by nucellus and cotyledon? [Critical Thinking]
6	Fill in the missing words: Pollen mother cell → Pollen tetrad → Pollen grain → Vegetative cell, ___?___ [Problem Solving]
7	How does pollination take place in aquatic plants? [Critical thinking]
8	How does a chasmogamous bisexual flower prevent self-pollination? [Problem Solving]
9	Arrange them sequentially according to how they appear in the artificial hybridization programme. Rebagging Selection of parent Bagging Dusting the pollen on the stigma Emasculation Collection of pollen [Problem Solving]

10	Self-incompatibility restrict autogamy. Explain	[Problem Solving]
11	Is there any difference between apomixis and arthenocarpny?	[Critical Thinking]
12	How many haploid cells are present in mature female gametophyte of a flowering plant? Name them.	[Analytical thinking]
13	An anther with malfunctioning tapetum often fails to produce viable male gametophytes. Give one reason.	[Critical Thinking]
14	Why is it that the generative cell of 2-celled pollen divides in a pollen tube and not of 3-celled pollen?	[Critical Thinking]



LEARNING OBJECTIVES



The Mathematics promotes mathematical skills and knowledge for their intrinsic beauty, effectiveness in developing proficiency in analytical reasoning, and utility in modeling and solving real world problems. To responsibly live within and participate in the transformation of a rapidly changing, complex, and interdependent society, students must develop and unceasingly exercise their analytical abilities. Students who have learned to logically question assertions, recognize patterns, and distinguish the essential and irrelevant aspects of problems can think deeply and precisely, nurture the products of their imagination to fruition in reality, and share their ideas and insights while seeking and benefiting from the knowledge and insights of others.

LAB MANUAL

PROJECT

General Instructions :

Write the following activities in Mathematics Lab Manual :

General Instructions:

Students will prepare the project in any one topic given below in MS Word and take print out. Attach print out in stick file with School Cover Page. No spiral binding is required.

Activity 1 : To verify that the relation R in the set L of all lines in a plane, defined by $R = \{ (l, m) : l \perp m \}$ is symmetric but neither reflexive nor transitive.

Activity 3 : To demonstrate a function which is not one one but is onto. **Activity 5 :** To draw the graph of $\sin^{-1}x$ using the graph of $\sin x$ and demonstrate the concept of mirror reflection (about the line $y = x$).

Activity 8 : To establish a relationship between common logarithm (to the base 10) and natural logarithm (to the base e) of the number x .

Activity 9 : To find analytically

Project 1 : To minimise the cost of the food, meeting the dietary requirements of the staple food of the adolescent students of your school.

Project 2 : Estimation of the population of a particular region/country under the assumptions that there is no migration in or out of the existing population in a particular year.

Project 3 : Finding the coordinates of different points identified in your classroom using the concepts of three dimensional geometry and also find the distances between the identified points.

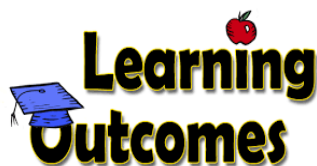
Project 4 : Formation of differential

the limit of a function $f(x)$ at $x = c$ and also to check the continuity of the function at that point.

equation to explain the process of cooling of boiled water to a given room temperature.



*Worksheet is given below for your reference.
Student will solve the worksheet in the subject notebook.*



After completing this assignment, students will be able to understand the properties of graphs of relations and functions. Along with this, Students will also be able to understand the graphs of trigonometric functions completely.. The main outcome of this assignment is to help students strengthen their mathematical knowledge and skills. This will boost their logical thinking and problem-solving skills.

SANSKAR PUBLIC SCHOOL, RAIGARH

WORKSHEET

CLASS : XII

SUB : MATHEMATICS (041)

Students will solve the questions in the subject notebook.

1	A function $f : A \rightarrow B$ defined as $f(x) = 2x$ is both one-one and onto. If $A = \{1,2,3,4\}$, then find the set B. [Application Based]
2	Prove that the function f is surjective, where $f : N \rightarrow N$ such that $f(n) = \begin{cases} \frac{n+1}{2}, & \text{if } n \text{ is odd} \\ \frac{n}{2}, & \text{if } n \text{ is even} \end{cases}$ Is the function injective? Justify your answer. [Creative]
3	Check whether the relation R in the set Z of integers defined as $R = \{(a, b) : a + b \text{ is "divisible by 2"}\}$ is reflexive, symmetric or transitive. Write the equivalence class containing 0 i.e. $[0]$. [Analyze]
4	Check if the relation R in the set R of real numbers defined as $R = \{(a, b) : a < b\}$ is (i) symmetric, (ii) transitive. [Critical Thinking]
5	Check if the relation R in the set $A = \{1, 2, 3, 4, 5, 6\}$ defined as $R = \{(x, y) : y \text{ is divisible by } x\}$ is (i) symmetric (ii) transitive. [Critical Thinking]
6	A relation R is defined on a set of real numbers R as $R = \{(x, y) : x \cdot y \text{ is an irrational number}\}$. Check whether R is reflexive, symmetric and transitive or not. [Critical Reasoning]
7	Show that a function $f : R \rightarrow R$ defined as $f(x) = \frac{5x-3}{4}$ is both one-one and onto. [Analyze]
8	Let $f : R - \{-\frac{4}{3}\} \rightarrow R$ be a function defined as $f(x) = \frac{4x}{3x+4}$. Show that f is a one-one function. Also, check whether f is an onto function or not. [Critical Reasoning]
9	A function $f : [-4, 4] \rightarrow [0, 4]$ is given by $f(x) = \sqrt{16 - x^2}$. Show that f is an onto function but not a one-one function. Further, find all possible values of a for which $f(a) = \sqrt{7}$. [Analyze]
10	Given, a non-empty set X , define the relation R in $P(X)$ as follows For $A < B \in P(X)$, $(A, B) \in R$ iff $A \subset B$. Prove that R is reflexive, transitive and not symmetric. [Creative]
11	Write the domain and range (principle value branch) of the following function $f(x) = \tan^{-1}x$. [Problem Solving]
12	Find the value of $\tan^{-1} \left[2 \cos \left(2 \sin^{-1} \frac{1}{2} \right) \right] + \tan^{-1} 1$. [Application Based]
13	Evaluate $\sin^{-1} \left(\sin \frac{3\pi}{4} \right) + \cos^{-1} \left(\cos \frac{3\pi}{4} \right) + \tan^{-1} (1)$. [Application Based]
14	Find the domain of $y = \sin^{-1}(x^2 - 4)$. [Problem Solving]

15	Evaluate $\cos^{-1} \left[\cos \left(-\frac{7\pi}{3} \right) \right]$. [Application Based]
16	Evaluate $3 \sin^{-1} \left(\frac{1}{\sqrt{2}} \right) + 2 \cos^{-1} \left(\frac{\sqrt{3}}{2} \right) + \cos^{-1} (0)$. [Application Based]
17	Draw the graph of $f(x) = \sin^{-1} x, x \in \left[-\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}} \right]$. [Creative]
15	Find the value of $\sin^{-1} \left[\cos \frac{33\pi}{5} \right]$. [Problem Solving]
19	Find the value of $\sin^{-1} \left[\sin \frac{13\pi}{7} \right]$. [Problem Solving]
20	Express $\tan^{-1} \left(\frac{\cos x}{1 - \sin x} \right), \frac{-3\pi}{2} < x < \frac{\pi}{2}$ in the simplest form. [Problem Solving]



CHEMISTRY

(043)



LEARNING OBJECTIVES



Studying chemistry will allow student to live in a more balanced world.

Student will develop Fundamental concept related to Solution, in general concentrations, vapour pressure, colligative properties etc.

Through investigatory projects, Students will be able to research about different topics and be able to prepare project on different topics.

LAB MANUAL

PROJECT

General Instructions:

1. Lab manual should be written by all students.
2. Experiments should be written in lab manual copy only.

General Instructions:

1. Project should be written in A4 size paper & attached it in stick file with front page of school.
2. Students will make only one project according to their roll no. as given below.

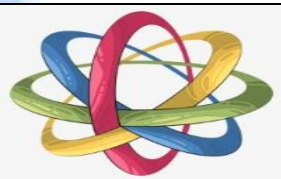
Class Roll No.	Topic
SEC A (Roll No. 1 to 10)	Topic 1
SEC A (Roll No. 11 to 20)	Topic 2
SEC A (Roll No. 21 to 30)	Topic 3
SEC A (Roll No. 31 to 40)	Topic 4
SEC B (Roll No. 1 to 10)	Topic 5
SEC B (Roll No. 11 to 20)	Topic 4
SEC B (Roll No. 21 to 32)	Topic 3

(1) To Prepare a Standard solution of Oxalic acid of Known Concentration.

(2) To Prepare a Standard solution of Sodium hydroxide of Known Concentration.

The Topics for the Projects are-

1. Study the presence of oxalate ion in guava fruit at different stages of ripening.
2. Study of the effect of potassium bisulphate as food preservative under various condition.
3. Study of common food adulterants in fat, oil, butter, sugar, turmeric, chilli powder and pepper.
4. Study of quantity of casein present in different samples of milk.
5. Study the preparation of soyabean milk and its comparison with the natural milk with respect to curd formation, effect of temperature etc.



CHEMISTRY MODEL

Topic 1- Electrochemical cell

Topic 2- Volcano eruption

Topic 3- Fire Extinguisher

Topic 4- Electrolysis of Water

Topic 5- RO Water Purifier

*Worksheet is given below for your reference.
Student will solve the worksheet in the subject notebook.*



**Learning
Outcomes**

After completion of these projects & assignments students enhance their critical thinking & develop problem solving skills.

Through experiments the students may be able to Prepare a Standard Solution of Known Concentration.

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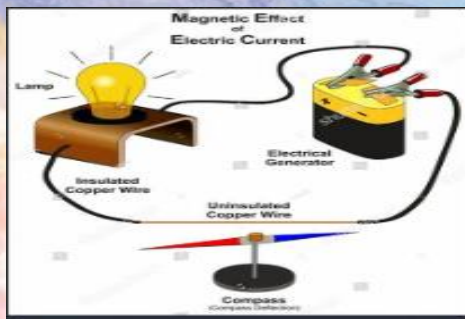
WORKSHEET

CLASS -XII

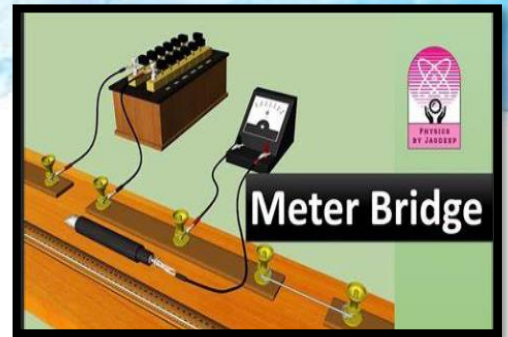
SUB: CHEMISTRY (043)

Students will solve the questions in the subject notebook.

1	Henry's law constant for the molality of methane in benzene at 298 K is 4.27×10^5 mm Hg. Calculate the solubility of methane in benzene at 298 K under 760 mm Hg. [Competency Based]
2	How is the sign of $\Delta_{\text{mix}} H$ related to positive and negative deviations from Raoult's law? [Knowledge Based]
3	Calculate the amount of benzoic acid ($\text{C}_6\text{H}_5\text{COOH}$) required for preparing 250 ml of 0.15 M solution in methanol. [Competency Based]
4	What role does the molecular interaction play in a solution of alcohol and water? [Thinking Based]
5	Boiling point of water at 750 mm Hg is 99.63°C . How much sucrose is to be added to 500 g of water such that it boils at 100°C . [Creativity Based]
6	The vapour pressures of pure liquids A and B are 450 mm and 700 mm of Hg respectively at 350 K. Calculate the composition of the liquid mixture if total vapour pressure is 600 mm of Hg. Also find the composition in the vapour phase. [knowledge Based]
7	Vapour pressure of pure water at 298 K is 23.8 mm Hg. 50 g of urea (NH_2CONH_2) is dissolved in 850 g of water. Calculate the vapour pressure of water for this solution and its relative lowering. [Competency Based]
8	Calculate (a) molality (b) molarity and (c) mole fraction of KI if the density of 20% (mass/mass) aqueous KI solution is 1 g mL^{-1} . [knowledge Based]
9	Define mole fraction. [knowledge Based]
10	Why do gases always tend to be less soluble in liquids as the temperature is raised? [Thinking Based]
11	Calculate the mass of urea (NH_2CONH_2) required in making 2.5 kg of 0.25 molal aqueous solution. [Thinking Based]
12	Define molality. [knowledge Based]
13	What is meant by positive and negative deviations from Raoult's law? [knowledge Based]
14	Calculate the mole fraction of benzene in solution containing 30% by mass in carbon tetrachloride. [Thinking Based]



PHYSICS (042)



LEARNING OBJECTIVES



Studying physics strengthens quantitative reasoning and problem solving skills that are valuable in areas beyond physics. Students will enhance their understanding which will help them to increase their scientific knowledge to the real world. Through these project & assignments the students will be able to determine the unknown resistance of a substance, usually a Conductor. The students may also able to know various types of circuit.

LAB MANUAL

ACTIVITY

General Instructions:

1. Lab manual file should be written by all students.
2. Experiments should be written in lab manual copy only.

General Instructions:

1. Activity should be written in A4 size plain white paper & attached it in stick file with front page of school.
2. Students will choose only one topic from science model given below.

- (1) To determine resistivity of two or three wires by plotting a graph between potential difference versus current.
- (2) To find resistance of a given wire using metre bridge.

- (1) To measure resistance, voltage (ac/dc), current and check continuity of a given circuit using Multimeter.
- (2) To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse & a power source.
- (3) To assemble the components of a given electrical circuit.



SCIENCE MODEL

- Topic 1**-Wireless Power Transmission
- Topic 2**-Electric door bell
- Topic 3**- Thermoelectric Generator
- Topic 4**-Escalator
- Topic 5**-Charging / Discharging of Capacitor



WORKSHEET

Worksheet is given below for your reference. Student will solve the worksheet in the subject notebook,



Learning Outcomes

After completion of these projects & assignments students enhance their critical thinking & develop problem solving skills. Through experiments the students may be able to differentiate between voltage & current. Through activities the student may be able to identify ac/dc voltage & current & they may also be able to connect the electrical circuit

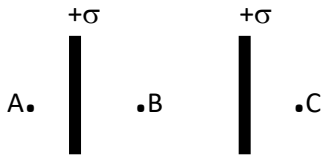
SANSKAR PUBLIC SCHOOL, RAIGARH

WORKSHEET

CLASS -XII

SUB: PHYSICS (042)

Students will solve the questions in the subject notebook.

1	If a charge on a body is 1C , then how many electrons are present on the body? [Competency Based]
2	Write the correct relation between the electric field and electric dipole moment. [knowledge Based]
3	In hydrogen atom , the proton(+e) and electron (-e) are separated by a distance 5.29×10^{-11} m. Calculate the electric dipole moment of this atom. [Competency Based]
4	How does the force between two point charges changes if the dielectric constant of the medium in which they are kept , increases? [Thinking Based]
5	Plot a graph showing the variation of coulomb's force(F) versus($1/r^3$) , where r is the distance between the two charges ($1\mu\text{C}$, $2\mu\text{C}$) and ($2\mu\text{C}$, $-3\mu\text{C}$). [Creativity Based]
6	Derive an expression for electric field intensity at a point due to a point charge. [Knowledge Based]
7	A thin insulating rod of length l carries a uniformly distributed charge Q. Calculate the electric field intensity due to this rod at a distance r from one end of the rod. [Competency Based]
8	Derive an expression for the electric field intensity at a point on the equatorial line of an electric dipole of dipole moment \mathbf{p} and length $2a$. What is the direction of this field? [knowledge Based]
9	An electric dipole of dipole moment \mathbf{p} is held in a uniform electric field \mathbf{E} . Hence , prove that the torque acting on the dipole is given by $\tau = pE \sin \theta$, indicating direction along which it acts. [Knowledge Based]
10	State Gauss's Law. Show that the electric field due to a uniformly charged infinite plane sheet at any point distance x from it , is independent of x. [Thinking Based]
11	Obtain an expression for electric field at a point A,B and C due to two oppositely charged thin infinitely long parallel plates. [Creativity Based]
	
12	Two extremely small charged copper spheres have their centers separated by a distance of 50cm in vacuum. What is the mutual force of electrostatic repulsion if the charge on each is $6.5 \times 10^{-7}\text{C}$? [Knowledge Based]
13	A certain charge Q is divided into two parts q and (Q-q) . How the charges Q and q be related so that when q and (Q-q) placed at a certain distance apart , experience maximum electrostatic repulsion? [Knowledge Based]



PHYSICAL EDUCATION

(048)



LEARNING OBJECTIVES



Students will understand the principles and importance of effective management in sports events.

Students will identify the key components involved in planning, organizing, and executing sports events.

They will develop skills in budgeting, marketing, logistics management, and contingency planning for sports events.

Apply theoretical knowledge to practical scenarios through case studies and simulations.

LAB MANUAL

General Instructions:

Complete the Lab Manual. The Manual Must contain

- Introduction
- Battery of Test
- Test description
- Rules & regulations
- Do's & Don'ts
- Comment

Practical-1: Fitness Tests Administration. (SAI Khelo India Test)



Worksheet is given below for your reference. Student will solve the worksheet in the subject notebook.

Learning Outcomes

Students will enhance their knowledge and Promotes Fitness And Physical Growth. Students will able to classify, Demonstrate , Explain, Express , Illustrates and recognize Different tests. At the end students can evaluate the success of sports events and analyze areas for improvement.

SANSKAR PUBLIC SCHOOL, RAIGARH

WORKSHEET

CLASS -XII

SUB: PHYSICAL EDUCATION (048)

Students will solve the questions in the subject notebook.

1	Draw a fixture of six teams using round robin method.	[Creative]
2	Draw a fixture of 9 teams using round robin method.	[Creative]
3	Draw knock-out fixture for 27 teams. where 4 teams are given special seeding.	[Creative]
4	Explain the planning process in sports or state the importance of planning in sports. .	[Knowledge Based]
5	Draw a knock-out fixture for 25 teams with all steps involved.	[Creative]
6	Draw a knock-out fixture for 19 teams mentioning all the steps involved.	[Creative]
7	Mauli wants to gain knowledge on various sports program. Suggest her what do you mean by community sports programs? Explain any three.	[Case Based]
8	League tournament is a better way to judge the best team of tournament comment.	[Critical Thinking]
9	Your school is organizing "Run for unity" explain the responsibilities of accreditation technical and finance committee.	[Knowledge Based]
10	Explain the meaning of sports management.	[Knowledge Based]
11	Draw a fixture of 16 teams using knock-out cum league method.	[Creative]
12	Briefly explain about any three community sport's programmers.	[Knowledge Based]
13	Define the terms 'Bye' and 'Seeding' or what do you mean by "seeding"?	[Critical Thinking]